

LOUISIANA DEPARTMENT OF WILDLIFE & FISHERIES



**OFFICE OF FISHERIES
INLAND FISHERIES SECTION**

PART VI -B

WATERBODY MANAGEMENT PLAN SERIES

TURKEY CREEK LAKE

**WATERBODY EVALUATION &
RECOMMENDATIONS**

CHRONOLOGY

DOCUMENT SCHEDULED TO BE UPDATED ANNUALLY

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WATERBODY EVALUATION

STRATEGY STATEMENT

Recreational

Sportfish species are managed to provide a sustainable population while providing anglers the opportunity to catch or harvest numbers of fish adequate to maintain angler interest and efforts.

Commercial

An abundant and under-utilized commercial fishery exists in Turkey Creek Lake. Commercial harvest is encouraged.

Species of Special Concern

No threatened or endangered fish species are found in this waterbody.

EXISTING HARVEST REGULATIONS

Recreational

Statewide regulations are in effect for all fish species. Recreational fishing regulations may be viewed at: <http://www.wlf.louisiana.gov/fishing/regulations>

Commercial

Statewide commercial regulations are in effect. There is no closed season. Commercial fishing regulations may be viewed at:
<http://www.wlf.louisiana.gov/fishing/regulations>

SPECIES EVALUATION

Recreational

Largemouth bass (*Micropterus salmoides*) are targeted for evaluation since they are a species indicative of the overall fish population due to their high position in the food chain. Electrofishing is the most efficient sampling indicator of largemouth bass abundance and size distribution, with the exception of large fish. Sampling with gill nets is normally conducted to determine the status of large bass and other large fish species. Gill net sampling is not conducted in Turkey Creek Lake due to the high density of submerged stumps and woody debris. Shoreline seining has been used to collect information related to fish reproduction and forage availability.

Largemouth Bass

Relative abundance, length frequency, and relative weight-

Electrofishing sampling is used to determine largemouth bass relative abundance and obtain length frequency and relative weight information. One measurement of abundance is the catch per unit of effort (CPUE) for a given species during sampling. This unit of measurement is defined as the number of bass captured per hour of sampling. Since the early

1990's, electrofishing has been the primary tool for estimating bass abundance in Turkey Creek Lake.

Turkey Creek Lake has inherent physical characteristics that reduce the efficiency of electrofishing sampling. Those characteristics include an extensive cypress forest, countless stumps, and clear shallow water. As a result, target fish are more randomly distributed throughout the lake and not as susceptible to collection. Electrofishing CPUE for bass is typically lower than for some other waterbodies. Standard error for Turkey Creek sampling is typically higher than other waterbodies. For these reasons, data from Turkey Creek Lake are only used for temporal comparisons with other data from Turkey Creek Lake. Such comparisons make it possible to determine abundance trends over a period of time and make general observations about the current population. Figure 1 (below) shows the CPUE from spring electrofishing samples conducted since 2000. These samples were conducted during daylight hours.

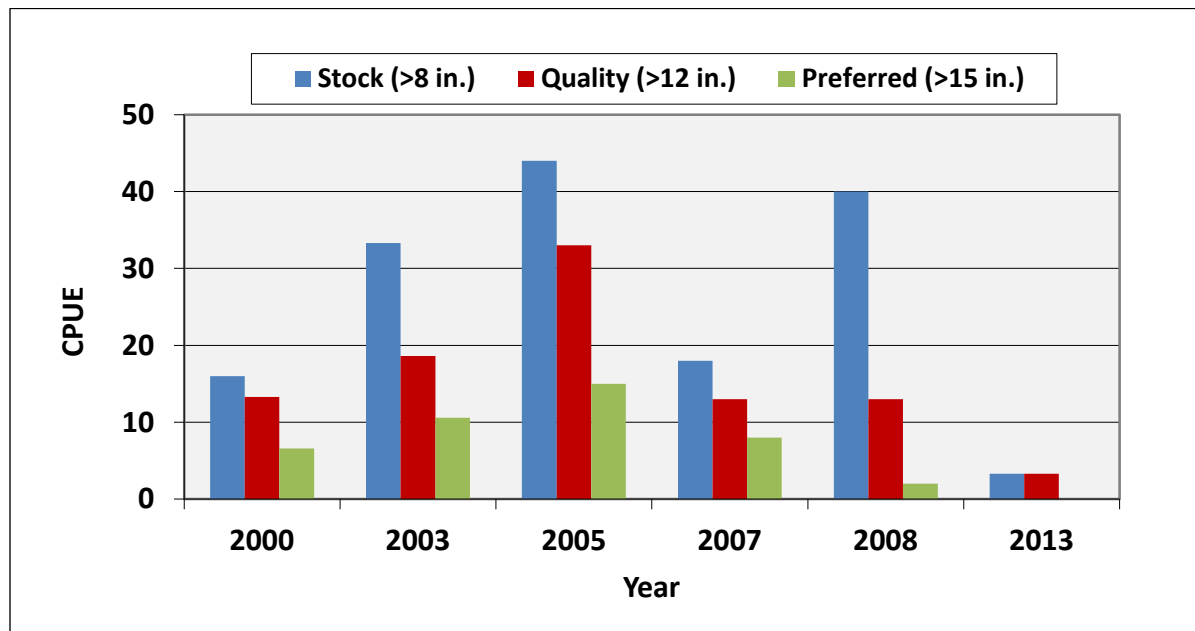


Figure 1. The CPUE (bass per hour) for stock-, quality-, and preferred-size largemouth bass collected from daytime spring electrofishing samples on Turkey Creek Lake, Louisiana 2000 – 2013.

During summer of 2014, an electrofishing sample was conducted during night hours at Turkey Creek Lake along shoreline areas near boat launches because of the difficulty of night-time boat navigation within the stump-filled lake. This sampling method proved to be effective and will be conducted in a similar fashion in the future. The CPUE results are shown in Figure 2 and the length frequency distribution of the sample is shown in Figure 3. The size distribution of the population appears to be fairly normal, with most inch classes represented and with stock- and quality-size bass being the most abundant.

Proportional stock density (PSD) is an index used to numerically describe length-frequency (size distribution) data. Proportional stock density compares the number of fish of quality-size (greater than 12 inches for largemouth bass) to the number of bass of stock-size (greater than 8 inches in length). The PSD is expressed as a percentage. The electrofishing results of

2014 provided a PSD value of 67, which is on the high end of the range of a normally distributed population. This means that there were more and larger fish (or fewer smaller fish) available than would be expected from a well distributed population.

Relative weight (W_r) or body condition values for each size class of bass are also included in Figure 2. The W_r value is an indicator of the body condition of the fish. It is calculated by dividing the weight of the individual fish by a known “standard” weight of a fish the same length and multiplying the quotient by 100. For example, a value of 100 would indicate that the fish weighs exactly what it should for its length. The values given for the respective size classes show that the bass in Turkey Creek Lake are in good condition and likely have abundant forage for adequate growth.

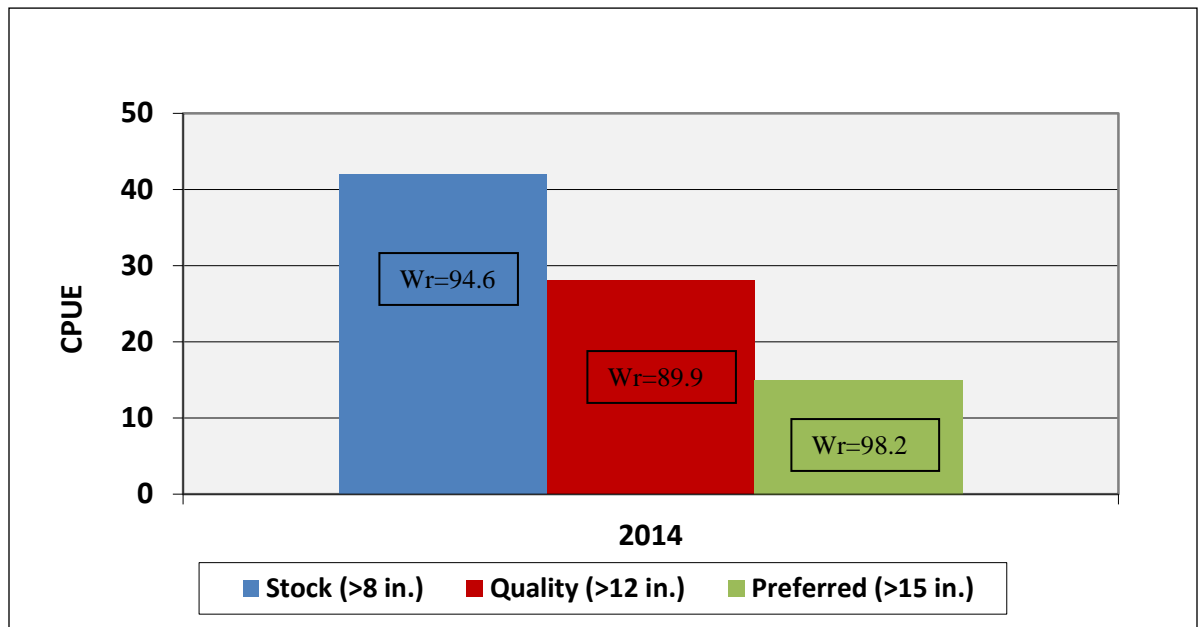


Figure 2. Relative abundance estimated by CPUE (bass per hour) for stock-, quality-, and preferred-size largemouth bass collected from nighttime summer electrofishing samples on Turkey Creek Lake, Louisiana in 2014. Relative weight (W_r) values are also given for each size class.

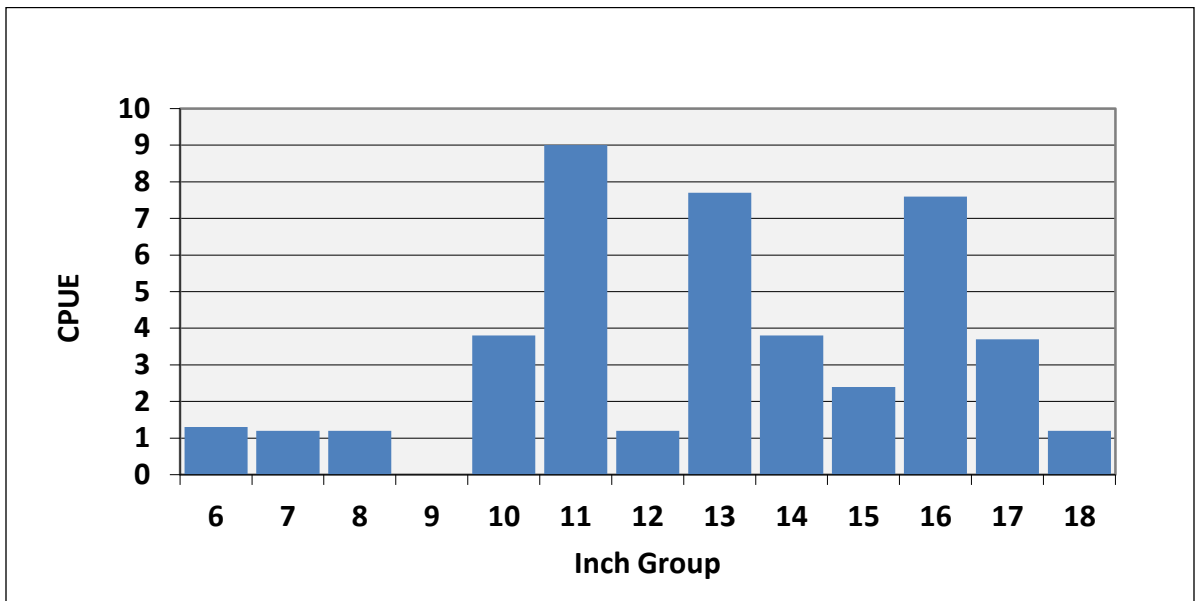


Figure 3. The CPUE (bass per hour) by individual length groups of largemouth bass from Turkey Creek Lake, Louisiana for the summer electrofishing sample conducted during nighttime hours during 2014.

Seine samples can be used to estimate bass reproduction, in addition to forage availability for bass and other predatory species. They are normally taken at boat ramps after dark during the summer months. The bass collected are typically less than 4 inches in length. Figure 4 shows the catch per seine sample (CPUE) of largemouth bass for the last five samples conducted on Turkey Creek Lake. Reproduction appears to occur annually, though moderately variable.

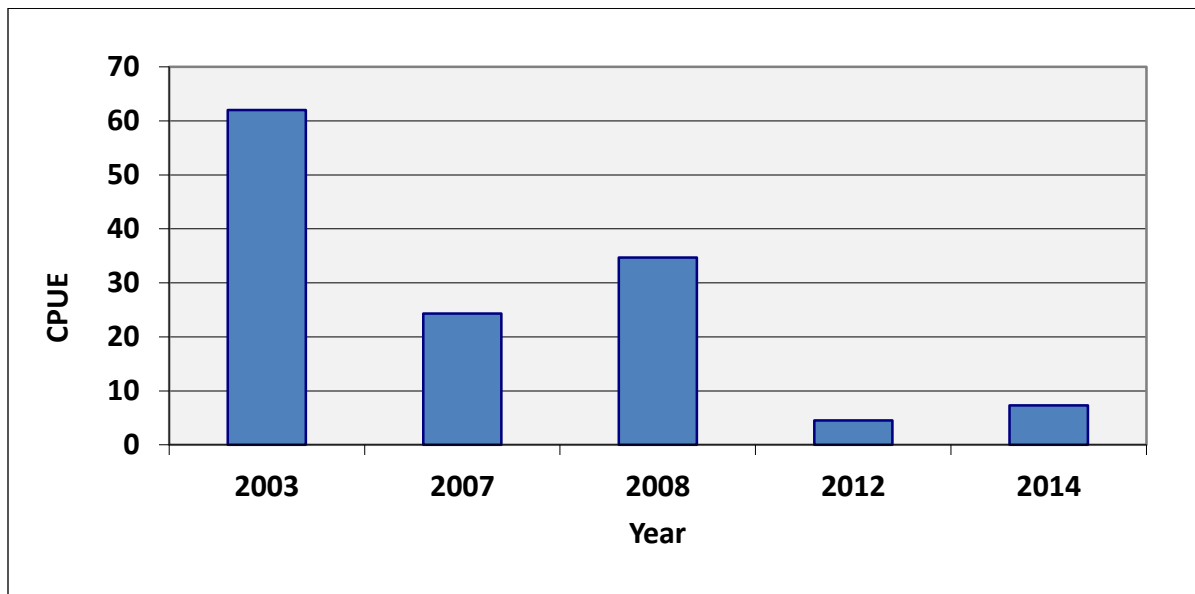


Figure 4. Catch per seine haul of young-of-the-year largemouth bass on Turkey Creek Lake, Louisiana for years 2003, 2007, 2008, 2012, and 2014.

Largemouth bass genetics-

Florida largemouth bass (*M. floridanus*) are typically stocked into waterbodies which are believed to have the potential to grow and produce quality size bass. Waterbodies are evaluated on habitat, fertility, forage, and requests from anglers. Florida bass stocking was initiated in 1993. Subsequent stockings were conducted in 1995, 1998, and 2006 – 2015. No genetic analysis was conducted before Florida bass stocking. An evaluation of genetic composition conducted in 2005 indicated 12.5% of the sample ($n = 24$) contained the Florida genome. These fish were all hybrid crosses of Florida X northern largemouth bass. A low sample size of bass from electrofishing samples in 2013 and 2014 did not allow for a significant genetic sample. Stocking of Florida bass fingerlings at a rate of 10 - 20 /acre is scheduled to continue in an effort to thoroughly evaluate the potential of Turkey Creek Lake to assimilate the Florida largemouth bass genome into the bass population. A comprehensive genetic evaluation will be conducted during the largemouth bass stock assessment study scheduled to begin in 2016.

Largemouth bass population assessment-

A 3-year population assessment study of largemouth bass will be initiated in 2016. Intensive sampling will be performed each fall from 2016 – 2018 to adequately assess various population characteristics. An angler survey will be conducted during this three year period to determine angler behavior and success. The results will be used to optimally manage the bass population in Turkey Creek Lake.

Crappie

Crappie abundance and size distribution-

Crappies (*Pomoxis* spp.) have long supported a popular fishery in Turkey Creek Lake, but were only first specifically targeted for sampling during fall 2014 with the use of 1.0 in. sq. mesh lead nets, which have become the standardized gear for crappie sampling (LDWF Inland Fisheries Sampling Procedures). Historically, both species, white crappie (*P. annularis*), and black crappie (*P. nigromaculatus*), have been recorded from various sampling gears, including gill netting, electrofishing, and biomass (rotenone) sampling. Catch rates in these samples were not sufficient for statistically valid analyses. Samples were conducted at three locations within or adjacent to deeper water on the south end of the lake in 2014. These samples proved to be reliable indicators of crappie abundance and size structure, as a total of 665 crappies were captured for length and weight measurements. The mean catch per hour was 2.31 (SE=0.426) and PSD was 46. The length-frequency (size) distribution (Figure 5) shows a crappie population that is slightly skewed toward smaller fish. This could be the result of an exceptionally large year class of fish produced by the 2013 and/or 2014 spawns.

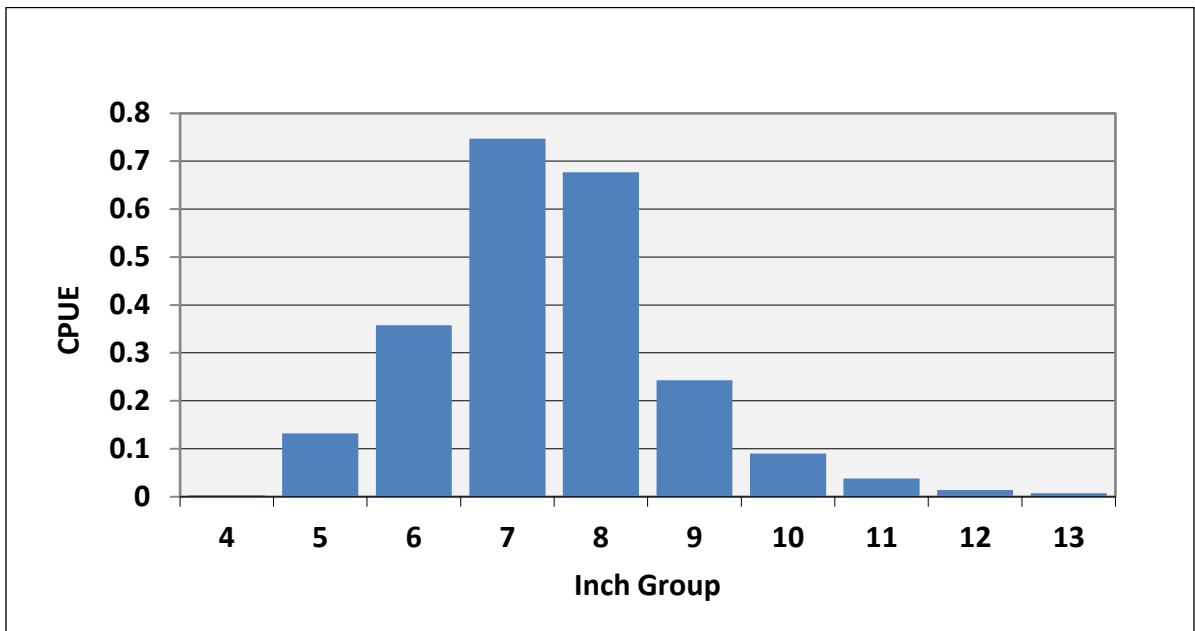


Figure 5. The CPUE (catch per hour) of individual inch groups of crappie captured from Turkey Creek Lake, Louisiana in lead net sampling conducted in 2014.

Crappie population assessment-

A 3-year assessment study of the crappie population will be initiated in 2016. Intensive sampling will be performed each fall from 2016-2018 to adequately assess various population characteristics. An angler survey will be conducted during this three year period to determine angler behavior and success. The results will be used to optimally manage the crappie population in Turkey Creek Lake.

Sunfish

Sunfish (*Lepomis* spp.) comprise an important component of the fisheries in Turkey Creek Lake. Bluegill (*L. macrochirus*), and redear sunfish (*L. microlophus*) are the most abundant sunfish species in Turkey Creek Lake. Other species documented from forage and seine samples include longear sunfish (*L. megalotis*), warmouth (*L. gulosus*), and orange-spotted sunfish (*L. humilis*). Sunfish are utilized as forage for predatory species such as largemouth bass, catfish (*Ictalurus* spp.), and gar (*Lepisosteus* spp.). Biomass (in pounds per acre) of sunfish species has been determined from prior sampling. Figure 6 shows the results of the last four samples taken on Turkey Creek Lake. An electrofishing forage sample was conducted in fall 2013, with only bluegill and no redear sunfish collected. Catch rates for bluegill are shown in Figure 7. A total of 228 bluegill and 14 redear sunfish were captured during the 2014 lead net samples.

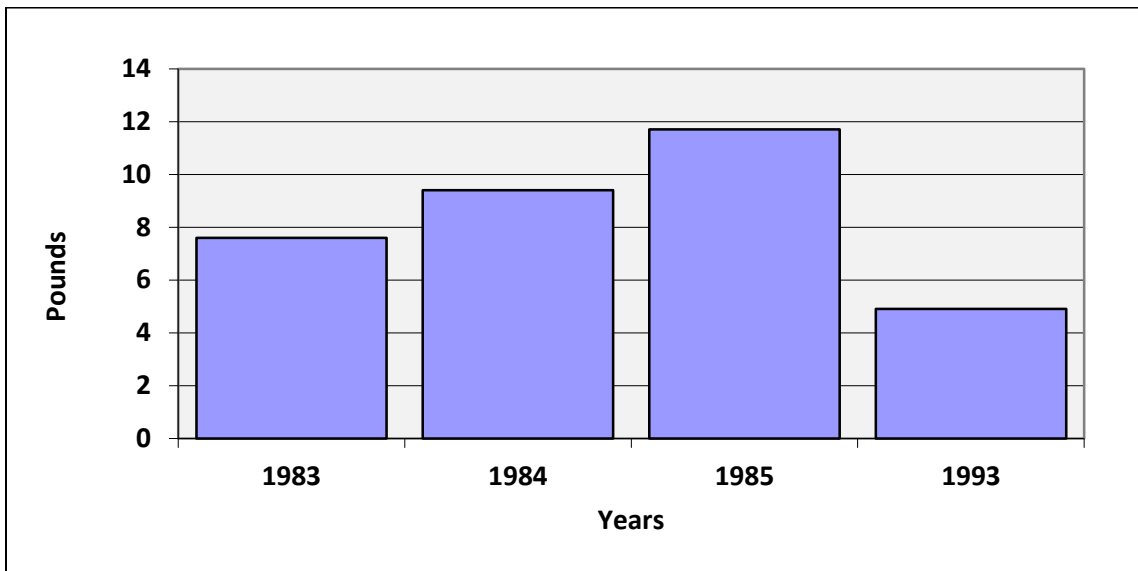


Figure 6. Biomass estimates in pounds per acre of sunfish for Turkey Creek Lake, Louisiana from biomass samples taken in 1983, 1984, 1985, and 1993.

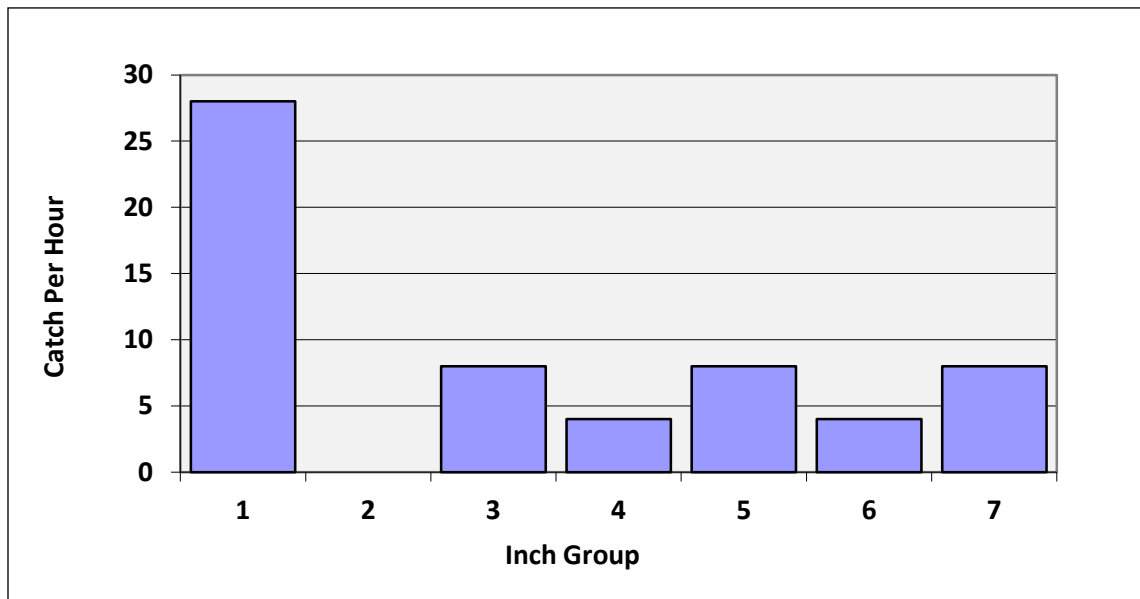


Figure 7. The CPUE (catch per hour) for bluegill on Turkey Creek Lake, Louisiana from fall electrofishing forage sample conducted in 2013.

Other Forage

Silversides (*Labidesthes* spp.), gizzard shad (*Dorosoma cepedianum*), threadfin shad (*D. petenense*), and cyprinid minnows (*Cyprinidae*) have been identified as other significant forage species in Turkey Creek Lake. Estimates of forage abundance have been made from past biomass samples. The data in Figure 8 represents forage biomass in pounds per acre from samples taken in 1983, 1984, 1985, and 1993.

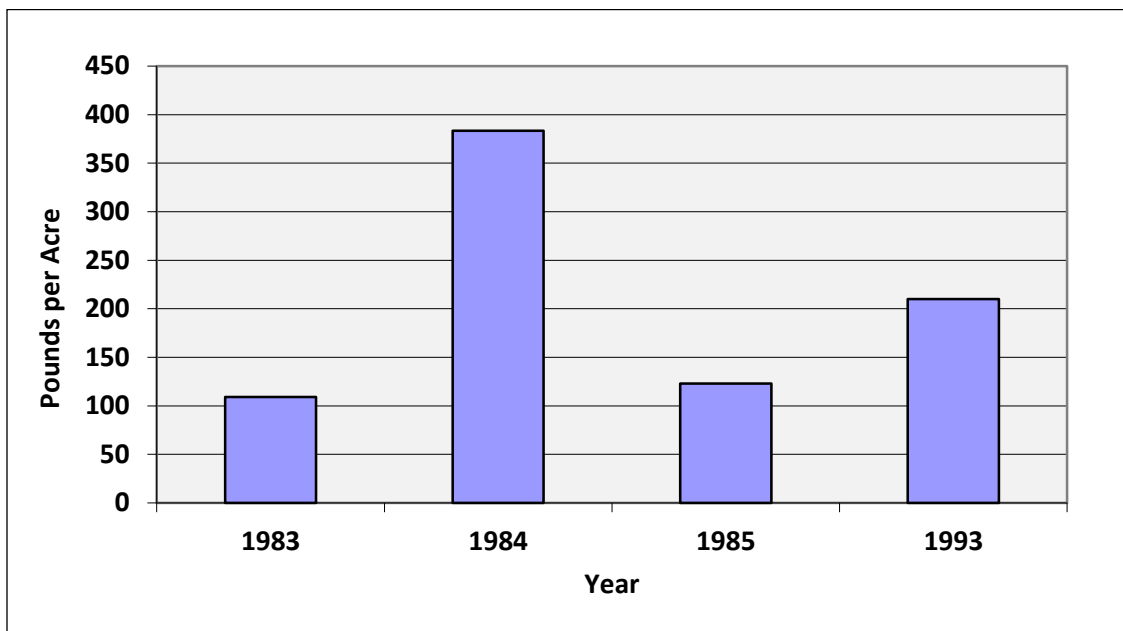


Figure 8. Biomass estimates of forage species from Turkey Creek Lake, Louisiana estimated from sampling results in 1983, 1984, 1985, and 1993.

Seine sampling at boat launches also provides estimates of forage abundance. Minnows, sunfish, and young of the year sportfish are typically collected. Figure 9 shows the CPUE results in mean catch per seine haul of total individuals from samples conducted since 2007. It should be noted that the 2003 CPUE estimate does not include silversides, as an exceptionally large number were captured (1,598 per sample). Forage is considered to be abundant and diverse in Turkey Creek Lake.

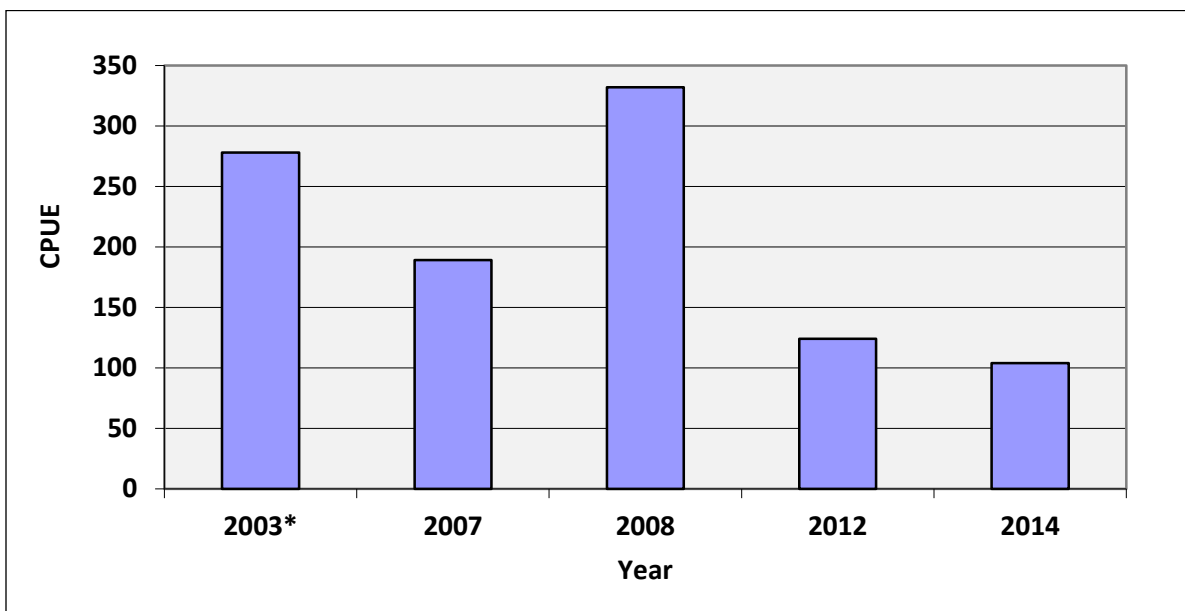


Figure 9. The CPUE (catch per seine haul) of all species captured during seine samples conducted on Turkey Creek Lake, Louisiana 2003 – 2014. *silversides not included in total due to exceptionally high number captured

Recreational Creel Survey

No creel surveys have been conducted on Turkey Creek Lake. A creel survey will be conducted in conjunction with the 3-year bass and crappie population assessment study to be initiated in 2016.

Commercial

Biomass sampling with the use of rotenone has shown that common commercial fish species have long existed in Turkey Creek Lake (Figure 10), though little commercial fishing activity has been documented. Buffalo fish have been the most abundant commercial species and catfish, freshwater drum, and gar are also common.

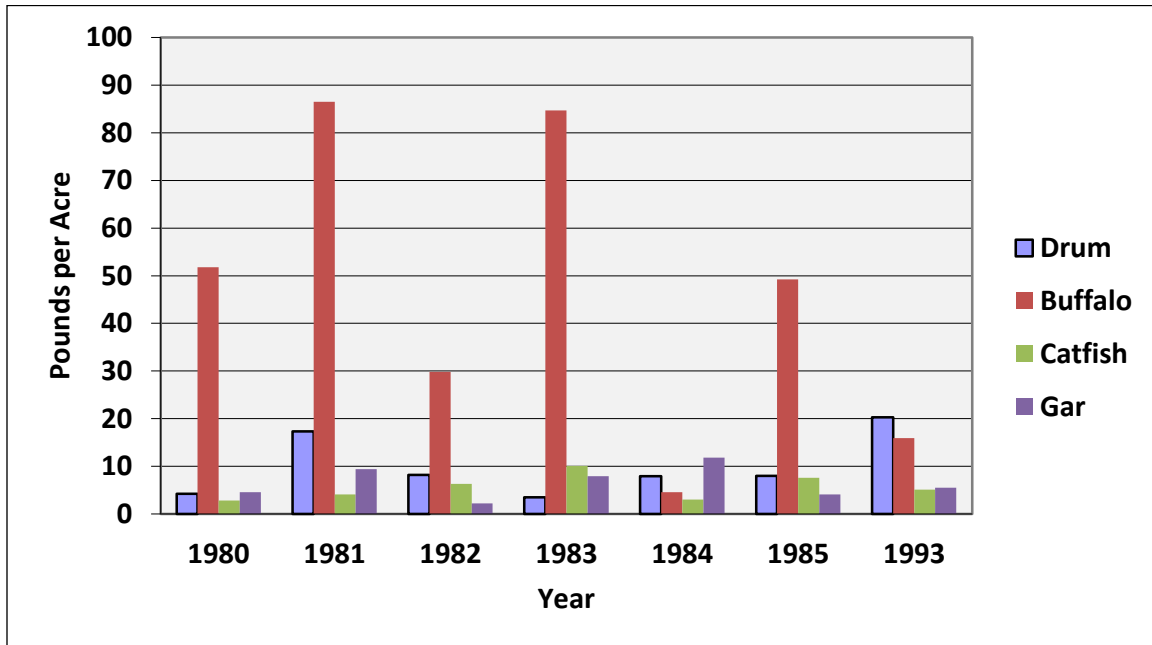


Figure 10. Biomass estimates of commercial species in Turkey Creek Lake , Louisiana from sampling conducted in 1980, '81, '82, '83, '84, '85, and 1993.

Numerous channel catfish were captured during the lead net sampling of 2014. The fish were mostly small, in the 9 – 11 inch range (Figure 11). Ages were not estimated to determine if they were young, or old “stunted” fish. The stunting of channel catfish populations has been documented from several Louisiana reservoirs.

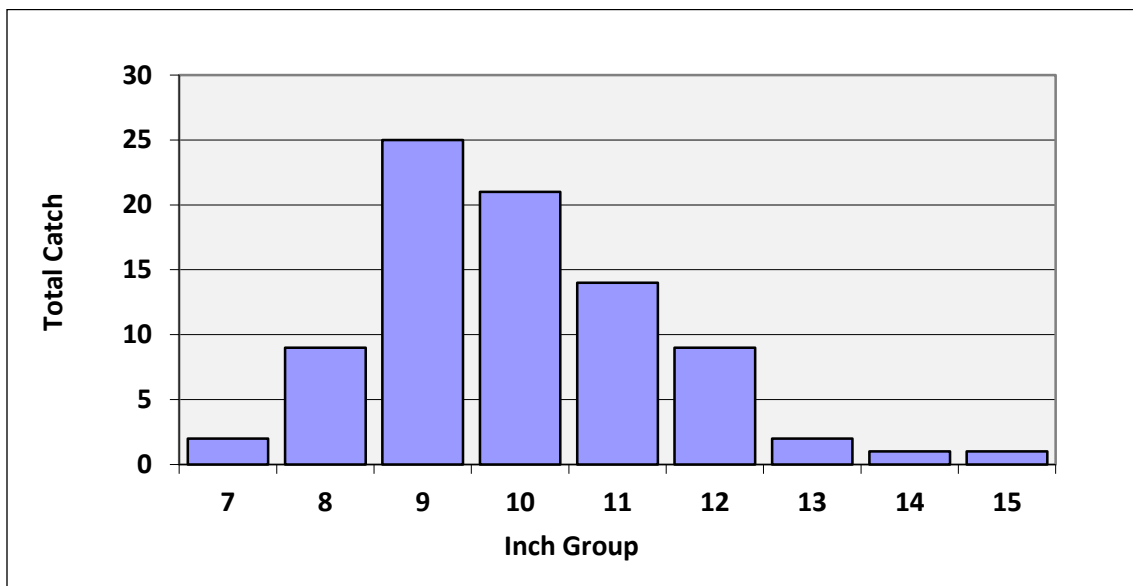


Figure 11. Total catch results of channel catfish per inch group from Turkey Creek Lake, Louisiana in lead net sampling conducted in 2014.

HABITAT EVALUATION

Aquatic Vegetation

Historically, floating vegetation such as duckweed (*Lemna* spp.), water hyacinth (*Eichhornia crassipes*), and water pennywort (*Hydrocotyle* spp.) have been the most abundant species, especially in the heavily forested upper reaches of Turkey Creek Lake. Giant salvinia (*Salvinia molesta*) was discovered in the lake in 2007 and has since become a priority for control. At times, it has formed surface mats covering several hundred acres in the upper reaches. When this occurs, dissolved oxygen levels become critically low under these mats and native plant species are negatively impacted. Dense thickets of bald cypress (*Taxodium distichum*) and button bush (*Cephalanthus occidentalis*) serve as nursery areas for the floating species, allowing coverage to expand to nuisance levels while being protected from wind action, frost, and herbicide application.

Submerged vegetation has historically been comprised of coontail (*Ceratophyllum demersum*) and southern naiad (*Najas guadalupensis*), both native species. Hydrilla (*Hydrilla verticillata*), an exotic species, has been present in Turkey Creek Lake for several years, though it has not reached nuisance levels. No control efforts have been necessary for any submerged species.

Vegetative abundance continues to be affected by backwater flooding from the Boeuf River. Extended flood events will temporarily decrease the coverage of submerged species. Receding water and rainfall will often create a flow through the upper ends of Turkey Creek Lake, and can “flush” floating vegetation out of these areas where they will be blown onto the shoreline by wind and wave action, or made vulnerable to herbicide applications.

Vegetation Control - 2015

Vegetation control included herbicide treatments by LDWF spray crews and the continued stocking of giant salvinia weevils (*Cyrtobagous salviniae*) in Turkey Creek Lake during 2015. Containment booms were deployed to hold floating vegetation in the upper reaches of

the lake. The majority of the herbicide applications were focused on giant salvinia (650 acres sprayed), though other floating species such as water hyacinth (105 acres), and water pennywort (20 acres) were also treated. The following LDWF salvinia treatment recommendation (or equivalent) has been followed since 2012:

Time Period	Herbicide Treatment and Rate
April 1 – October 31	glyphosate (0.75 gal/acre)/diquat (0.25 gal/acre)/Aqua King Plus (0.25 gal/acre)/Thoroughbred (12 oz/acre)
November 1 – March 31	diquat (0.75 gal/acre)/surfactant (0.25 gal/acre)

Other species of vegetation are effectively treated with these formulations as well. The herbicide 2,4-D (0.5 gal/acre) may be used for control of water hyacinth from September 15 March 15, and diquat dibromide (1.0 gal/acre) may be used for duckweed control year round. A vegetation type map was conducted in 2014 (Appendix A). Estimates of vegetation coverage for 2015 are listed below. Total coverage of these species has been similar in recent years.

Recent Vegetation Coverage - 2015

-Water Hyacinth - 100 acres; scattered in clumps throughout both upper arms of the lake.

-Giant Salvinia -300 acres; abundant in Big Brake area of eastern arm, with denser mats forming amongst other vegetation in northern end of arm. There is a lesser amount in the Little Brake area of the western arm. Approximately 90% of the total coverage is located north of the containment booms.

-Alligator weed– 50 acres, mostly shoreline fringe and small offshore patches, scattered throughout the lake.

-Pennywort.-75 acres; scattered in clumps throughout both upper arms of the lake.

-Duckweed - 100 acres; located in both upper arms, mixed in with giant salvinia and water hyacinth.

-Hydrilla– approximately 100 acres in 2014 forming surface mats, mostly on south end of lake, surface mats were not apparent in 2015 due to high turbid water in spring.

Prediction of Vegetation Coverage- 2016

Coverage of all aquatic plant species in Turkey Creek Lake is expected to remain similar to that of recent years. Regular herbicide treatments will be necessary to maintain giant salvinia at a manageable level. Hydrilla may once again form dense mats on the south end of the lake, especially if water levels remain stable throughout the spring and/or the water does not become excessively turbid.

Substrate

The natural substrate of Turkey Creek Lake is mostly clay. The senescence of aquatic vegetation and accumulation of leaf litter from surrounding trees has added a significant volume of organic material to the lake bottom.

Available complex cover

The most prominent forms of complex cover in Turkey Creek Lake are live bald cypress trees and submerged woody material (stumps and fallen debris). Cypress trees are common in the shallow areas on the upper end, while other woody material, mostly hardwood and cypress stumps, is found throughout. Submerged vegetation provides a varying amount of shallow water cover, with coontail and hydrilla being the dominant species.

CONDITION IMBALANCE / PROBLEM

The most serious threat to the fisheries and recreational users of Turkey Creek Lake is the continued expansion of giant salvinia. Extensive coverage creates large areas of hypoxic conditions and threatens native vegetation. High volumes of hypoxic water pose a threat of fish kills, especially when disturbances such as severe storms occur during warm months. Large surface mats limit boating access and other recreational activities.

CORRECTIVE ACTION NEEDED

Efforts to control giant salvinia will continue. The discovery of new tools to control giant salvinia remains as a top LDWF priority.

RECOMMENDATIONS

Continue an integrated approach to control giant salvinia on Turkey Creek Lake. LDWF will use an integrated management program of aggressive herbicide applications, biological control and physical measures to achieve combined benefits.

Chemical Control

Herbicide applications for control of giant salvinia and other nuisance aquatic vegetation will be conducted in accordance with LDWF Aquatic Herbicide Application Protocol. Diquat dibromide (1.0 gal/acre) will be used primarily for control of duckweed and 2,4-D (0.5 gal/acre) will be used to treat pennywort and water hyacinth. Giant salvinia will be treated with a mixture of glyphosate (0.75 gal/acre) and diquat dibromide (0.25 gal/acre) with Turbulence (0.25 gal/acre) surfactant from April 1 to October 31. Outside of that time frame, diquat (0.75 gal/acre) and a non-ionic surfactant (0.25 gal/acre) will be used.

An evaluation will be made in mid-March to determine the need for contracted herbicide applicators. When coverage exceeds 250 acres, a contract will be requested.

The removal or thinning of buttonbush *Cephalanthus occidentalis* will be investigated. These areas in the upper reaches of the lake harbor salvinia, duckweed, and water hyacinth, and make herbicide treatments by boat very difficult. Opening these areas would also allow wind action and currents to periodically remove severe infestations.

Biological Control

Giant salvinia weevil introductions have proved promising thus far. The plants at the stocking sites appear to be stressed, with salvinia being browner in coloration than those plants in surrounding areas. Assessments of weevil survival at the site in Big Brake have shown survival to be very good. Weevil introductions will continue, and additional sites in Little Brake should be stocked when conditions warrant.

Physical Control

The containment booms will remain in place in order to prevent salvinia from spreading into other areas of the lake. A gradual movement of the booms northward has already begun and should continue when possible. This will provide for a smaller treatment area if infestations do not develop south of the booms.

If salvinia coverage expands at a rate greater than can be controlled with the above recommendations, a drawdown will be recommended. The drawdown will be considered when total giant salvinia coverage is expanding at a rate such that the total estimated coverage will exceed 500 acres in a particular growing season and large surface coverage occurs south of the containment booms. Assessments will be performed bi-monthly.

Recommendations to DOTD for drawdowns will be as follows:

1. The target water level will be 6 feet below spillway crest height
2. Dewatering rate will be 2 to 4 inches per day.

3. The drawdown will extend for at least 90 days after the target level of 6 feet below spillway crest height is reached.
4. The gates will be closed no later than January 31 of the following year.

Repairs should be made to the leaking spillway to prevent excessive lowering of the lake level. It is believed that the current seepage through cracks and holes leads to at least an additional foot of dewatering during the summer months. The lower water levels increase the difficulty of spray boats to navigate the upper reaches of Turkey Creek Lake. Coordination with FPPJ and LDOTD should be made prior to the next planned drawdown to remedy this situation.

Alternative sampling methods will be investigated to more accurately assess the sport fish population on Turkey Creek Lake.

1. Experimental electrofishing will be conducted at various locations and also at night in areas that may be safe for boat travel. Some satisfactory locations have already been identified, while additional sites will be needed for the largemouth bass stock assessment study.
2. The use of leadnets will be investigated to assess crappie populations. Leadnets were first deployed in 2014 and proved to be a satisfactory sampling gear. Additional sampling sites will be chosen to adequately sample the crappie population for the crappie stock assessment study.
3. Sampling with rotenone may be considered if standardized methods do not accomplish sampling goals.
4. A recreational angler creel survey will also be considered to determine feasibility and viability. A creel survey will be completed in 2017 in association with the bass and crappie stock assessment studies.

APPENDIX A. Aquatic Vegetation Type Map of 2014

Turkey Creek Lake

Aquatic Vegetation Type Map Survey

8-20-14

A survey of the vegetation on Turkey Creek was completed on August 20, 2014 by Inland staff biologists Ryan Daniel and Chase McPherson. The lake was at pool stage (MSL = 44.0 ft.). The shoreline of the lake was travelled by boat from south to north. The extreme upper reaches of Big and Little Brakes were not surveyed due to difficulty of boat travel. Notes of observations and depictions of vegetation on maps were made during the survey. A summary is provided below for different sections of the lake.

Lower Lake (south of Hwy. 562)

Approximately 30% of this portion of the lake is infested with hydrilla, reaching the surface in depths up to 5 ft. It was found along much of the shoreline and the shallow ridge which runs north-south for the entire length of this area. *Chara* spp. was abundant in the NW corner and on the small point S of Mabry's ramp. The SAV in the northern half of this section was comprised mostly of hydrilla, while coontail became more abundant at the southern end along the creek channel between the islands. The coontail grew mostly on the deep edge of the hydrilla in 5.5 ft. depths. In the SW corner canal, coontail was the primary SAV species, while duckweed, primrose, water hyacinth and duck potato (*Sagittaria* spp.) were found along the shoreline. American lotus was found along much of the dam, with hydrilla growing underneath. Total coverage of SAV was 40%, while coverage of emergent and floating was limited to the immediate shoreline and not significant.

Mid-Lake (Hwy. 562 N to Pricketts Bayou)

Widely scattered hydrilla was found along the north side of the highway along the immediate shoreline and scattered along the western shore in the shallows and amongst the trees. No significant mats of SAV were observed. Coontail also scattered along western shoreline. Both species of SAV became less abundant travelling northward. Individual plants of giant salvinia (GS) were seen approx. midway from Hwy. to Pricketts Bayou on west side. There was also some scattered GS at the mouth of Pricketts Bayou. There were a couple of large mats of American lotus (5 acres) on the western shore. Very little vegetation was observed on the eastern shore.

Little Brake (western arm of lake)

Scattered GS was found near the mouth of Little Brake, though had been blown from Big Brake. Little Brake has not been a source of GS in 2014. Only a few scattered plants of GS were observed N of the containment boom. There was some wind-blown accumulation along the shorelines below the boom. Hydrilla was found along a short stretch of shoreline south of the boom on the western shoreline. Coontail is also growing in the shallows. North of the boom, duckweed and water hyacinth were common on the western shore (from recent winds). A solid mat of duckweed has formed and was approximately .25 miles north of boom, though it moves from wind action. The mat is very dense and covers a large area (>50 acres). Within the mat, parrots feather, pennywort and water hyacinth are abundant. It is not known how far north it extends, but is believed to cover much of the area north of the boom.

Big Brake (eastern arm of lake)

The upper reaches of Big Brake are the current source of giant salvinia in Turkey Creek. Much of the GS is contained north of the 2 booms, though some has gotten below them through breaches and heavy wind action. It is only scattered below the south boom, with some small accumulations on the shore from wind action. Recent westerly winds had blown some along the eastern shore of Big Brake below the south boom. In between the booms, a large mat (25 acres) had formed in the NE corner of this section and was common throughout. A solid mat has formed above the north boom with pennywort and parrots feather included. It is unknown how far north this mat extends but is believed to be at least 200 acres, extending into the east branch of Big Brake. A recent contract herbicide application appears to have browned 40% of GS in between the booms and 90% for 200 m N of the upper boom. There is very little SAV in this area, though scattered coontail is present. No hydrilla was seen here.

SUMMARY

The coverage of giant salvinia in Big Brake continues to be of concern, as it threatens the rest of the lake. The containment booms have been successful at maintaining the large mats of GS in the upper reaches of Big Brake, where it has very little impact on recreation or private property. Recent breaches in the boom have introduced GS into the mid-lake area, where it is currently widely scattered. With the exception of the lower end of the lake, SAV is limited to the shallows, without large mats forming. The large mat of duckweed in Little Brake is of concern as strong winds could push it into the main lake area. There is very little recreation north of the boom in Little Brake. There are also many small patches of alligator weed scattered throughout the lake, typically clinging to submerged stumps or log piles. The coverage is not considered to be a nuisance and actually provides cover for fish. Much of the shallows (<5 ft.) south of Hwy. 562 have become infested with hydrilla within the past two years. Currently, it is impacting a few residences. Emergent and floating vegetation in the mid-lake and southern portions are limited to the immediate shoreline in some areas, causing no problems. Duckweed and giant salvinia are the most abundant species, followed by hydrilla, water hyacinth, pennywort, parrots feather, alligator weed, and American lotus.

Species List

Submerged Aquatic Vegetation

Hydrilla *Hydrilla verticillata*

Chara *Chara* spp.

Coontail *Ceratophyllum demersum*

Emersed Aquatic Vegetation

Alligator weed *Alternanthera philoxeroides*

American Lotus *Nelumbo lutea*

Parrot's feather *Myriophyllum aquaticum*

Water pennywort *Hydrocotyle* spp.

Floating Aquatic Vegetation

Water hyacinth *Eichhornia crassipes*

Giant salvinia *Salvinia molesta*

Duckweed *Lemna* spp.